IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

Listing of Claims

Please amend the claims to read as follows:

1-24. (Canceled)

25. (Currently Amended) A process for producing metal nanoparticle-nucleic acid composites, comprising:

providing a nucleic acid specific metal complex;

reacting said nucleic acid specific metal complex with a nucleic acid to produce a metal complex-nucleic acid conjugate;

removing any non-conjugated metal complexes and/or non-conjugated by-products; and

reacting the metal complex-nucleic acid conjugate with a reducing agent to produce a metal nanoparticle-nucleic acid composite,

wherein the metal complex-nucleic acid conjugate is formed by the specific metalation of bases of the nucleic acid or by binding of said nucleic acid specific metal complex through an interactive ~~ligand~~ group, and

wherein the metal nanoparticle is catalytically active towards electroless metallisation.

26. (Currently Amended) The process according to claim 25, wherein the nucleic acid ~~component~~ is reacted while dissolved in a solution, immobilized on a substrate or in a semisolid state with said nucleic specific metal complex.

27. (Previously Presented) The process according to claim 25, wherein the nucleic acid is selected from the group consisting of DNA, RNA, PNA, CNA, oligonucleotides, oligonucleotides of DNA, oligonucleotides of RNA, primers, A-DNA, B-DNA, Z-DNA, polynucleotides of DNA, polynucleotides of RNA, triplexes of nucleic acids and quadruplexes of nucleic acids-and combinations thereof.

28. (Previously Presented) The process according to claim 25, wherein the nucleic acid is double-stranded or single-stranded.

29. (Previously Presented) The process according to claim 25, wherein the nucleic acid specific metal complex is selected from the group consisting of dichloro (2,2':6',2"-terpyridine) platinum(II), cis-diaminodichloroplatinum(II) and metal complexes with attached or integrated nucleic acid interacting groups.

30. (Previously Presented) The process according to claim 25, wherein the metal complex-nucleic acid conjugate is separated from a non-conjugated metal complex and/or non-conjugated by-products by chromatography, precipitation or rinsing.

31. (Previously Presented) The process according to claim 25, wherein the metal complex-nucleic acid conjugate is reacted with at least one reducing agent selected from the group consisting of boron hydrides, borohydride salts, Lewis base: borone complexes of the general formula $L:BH_3$, wherein L is amine, ether, phosphine, sulfide, hydrazine and derivatives, hydroxylamine and derivatives, hypophosphite salts, formate salts, dithionite salts and H_2.

32. (Previously Presented) The process according to claim 31, wherein the reducing agent is a gaseous reducing agent.

33. (Previously Presented) The process according to claim 25, wherein the metal nanoparticle comprises at least one metal selected from the group consisting of Fe, Co, Ni, Cu, Ru, Rh, Pd, Ag, Os, Ir, Pt, Au and combinations of these metals.

34. (Previously Presented) The process according to claim 25, wherein the metal nanoparticle cannot be visualized by atomic force microscopy or wherein the diameter of the metal nanoparticle is smaller than 3nm.

35. (Currently Amended) The process according to claim 25, further comprising the step of treating the metal nanoparticles within the metal complex-nucleic acid conjugate ~~nanoparticle-nucleic acid composite~~ with an electroless plating solution to enlarge the metal nanoparticles.

36. (Currently Amended) The process according to claim 35, wherein the metal complex-nucleic acid ~~composite~~ conjugate is treated while dissolved in a solution, immobilized on a substrate or in a semisolid state with an electroless plating solution.

37. (Previously Presented) The process according to claim 35, wherein the metal nanoparticles within the metal nanoparticle-nucleic acid composite are treated with an electroless plating solution comprising at least one of the metals selected from the group consisting of Fe, Co, Ni, Cu, Ru, Rh, Pd, Os, Ir, Ag, Pt, Au and combinations thereof.

38. (Previously Presented) The process according to claim 35, wherein the metal nanoparticles are treated with an electroless plating solution comprising at least one of the metals selected from the group consisting of magnetic Fe, Co, Ni, and combinations of these metals or combinations of these metals with boron (B) or phosphorous (P).

39. (Previously Presented) A metal nanoparticle-nucleic acid composite produced by the method of claim 25, wherein the metal nanoparticles have a diameter of less than 3 nm or cannot be visualized by atomic force microscopy.

40. (Currently Amended) A process for the manufacture of a nanowire, comprising:

providing a metal nanoparticle-nucleic acid composite produced by a process comprising reacting a nucleic acid specific metal complex with a nucleic acid to produce a metal complex-nucleic acid conjugate;

removing any non-conjugated metal complexes and/or non-conjugated by-products;

reacting the metal complex-nucleic acid conjugate with a reducing agent to produce a metal nanoparticle-nucleic acid composite; and

growing the nanoparticle by electroless deposition of a metal selected from the group consisting of Fe, Co, Ni, Cu, Ru, Rh, Pd, Os, Ir, Ag, Pt, Au and combinations or alloys thereof,

wherein the metal complex-nucleic acid conjugate is formed by the specific metalation of bases of the nucleic acid and/or interactive ~~ligand~~ group binding, and

wherein the metal nanoparticle is catalytically active towards electroless metallisation, and wherein the metal nanoparticles have a diameter of less than 3 nm or cannot be visualized by atomic force microscopy.

41. (Currently Amended) A nanowire obtainable according to a method of claim 40, wherein said nanowire ~~is completely metallised or not completely metallised~~comprises metal nanoparticle-nucleic acid composite which do or do not have insulating spaces between the individual nanoparticles positioned along the nucleic acid strand.

42. (Previously Presented) A small-scale network or electronic circuit, comprising at least one nanowire according to claim 41.

43. (Previously Presented) The process according to claim 26, wherein the semisolid state is a gel.

44. (Previously Presented) The process according to claim 29, wherein the said interacting groups are intercalating, groove binding or alkylating agents.

45. (Previously Presented) The process according to claim 30, wherein the metal complex-nucleic acid conjugate is separated from a non-conjugated metal complex and/or non-conjugated by-products by gel filtration chromatography, ion exchange chromotography, ethanol precipitation, water rinsing or aqueous salt solution rinsing.

46. (Previously Presented) The process according to claim 33, wherein the metal nanoparticle comprises Fe, Co, Ni, Cu, Ru, Rh, Pd, Ag, Os, Ir, Pt or Au and alloys of these metals.

47. (Previously Presented) The process according to claim 40, wherein said growing step is a controlled growing step.